

Having described the invention, we claim the following:

1. A pressure relief valve for relieving air pressure from a passenger compartment of a vehicle, the pressure relief valve comprising:

a base having a peripheral portion, a central opening extending through the peripheral portion; and

a plurality of flaps for closing the central opening of the base, each flap having an outer end connected with the peripheral portion of the base and an inner end that is movable relative to the peripheral portion and the other flaps for enabling airflow through the central opening;

each flap having opposite surfaces against which air pressure acts, differential air pressure acting on the opposite surfaces causing the flap to move to enable airflow through the central opening.

2. The pressure relief valve of claim 1 wherein the base includes a support portion that divides the central opening into a plurality of flow openings, each flap of the plurality of flaps being associated with at least one flow opening for closing the at least one flow opening.

3. The pressure relief valve of claim 2 wherein the support portion of the base supports the inner end of each flap in a closed condition closing the at least one flow opening, the support portion enabling movement of the inner end of each flap in a first direction relative to the support portion and preventing movement of the inner end in a second direction, opposite the first direction, relative to the support portion for enabling airflow through the at least one flow opening in only the first direction.

4. The pressure relief valve of claim 3 wherein the base, including the peripheral portion and the support portion, is a monolithic structure that is free from any connecting devices, is formed from a homogenous material, and has a uniform density throughout.

5. The pressure relief valve of claim 1 wherein each flap of the plurality of flaps includes at least one hinge for connecting the inner end of the flap with the outer end of the flap, the at least one hinge enabling movement of the inner end relative to the outer end.

6. The pressure relief valve of claim 5 wherein the at least one hinge is at least one narrow portion of material formed between slots in the flap.

7. The pressure relief valve of claim 1 wherein each flap of the plurality of flaps is biased into a closed condition for, collectively, closing the central opening so that the pressure relief valve operates independent of gravity.

8. The pressure relief valve of claim 1 wherein the plurality of flaps are formed in a single sheet of flexible material, the outer ends of the plurality of flaps being interconnected to collectively form an undivided outer periphery of the sheet of flexible material, the inner ends of the plurality of flaps forming a central portion of the sheet of flexible material and being movable relative to the outer periphery.

9. The pressure relief valve of claim 8 wherein the peripheral portion of the base includes first alignment members and the outer periphery of the sheet of flexible material includes second alignment members that are adapted to cooperate with the first alignment

members for positioning the sheet of flexible material relative to the base.

10. The pressure relief valve of claim 1 further including a rim molded onto the peripheral portion of the base for fixedly securing the outer end of each flap to the peripheral portion of the base.

11. The pressure relief valve of claim 10 wherein the rim includes a locking portion adapted to secure the pressure relief valve to a panel of the vehicle, the locking portion further being adapted to seal against the panel of the vehicle.

12. The pressure relief valve of claim 10 wherein the base is a molded base.

13. A method of forming a pressure relief valve for relieving air pressure from a passenger compartment of a vehicle, the method comprising the steps of:

providing a base having a peripheral portion and a central opening that extends through the peripheral portion;

closing the central opening of the base with a plurality of flaps;

connecting an outer end of each flap with the peripheral portion of the base; and

enabling airflow through the central opening by causing an inner end of each flap to move relative to the peripheral portion and the other flaps due to differential air pressure acting on opposite surfaces of the flap.

14. The method of claim 13 wherein the step of providing a base having a peripheral portion and a central opening further includes the step of injection molding the base.

15. The method of claim 13 wherein the step of providing a base having a peripheral portion and a central opening further includes the steps of providing a support portion of the base that divides the central opening into a plurality of flow openings, and associating a flap of the plurality of flaps with at least one flow opening for closing the at least one flow opening and for moving to enable airflow through the at least one flow opening.

16. The method of claim 15 further including the steps of supporting, with the support portion of the base, the inner end of each flap in a closed condition

closing the at least one flow opening, enabling movement of the inner end of each flap in a first direction relative to the support portion, and preventing movement of the inner end of each flap in a second direction, opposite the first direction, relative to the support portion for enabling airflow through the at least one flow opening in only the first direction.

17. The method of claim 15 wherein the steps of providing a base having a peripheral portion and providing a support portion on the base further include the step of molding the base, including the peripheral portion and the support portion, from a homogenous material so that the base is a monolithic structure that is free from any connecting devices and has a uniform density throughout.

18. The method of claim 13 wherein the step of closing the central opening of the base with a plurality of flaps further includes the step of forming at least one hinge in each flap to connect the inner end of the flap with the outer end of the flap for enabling movement of the inner end relative to the outer end.

19. The method of claim 18 wherein the step of forming at least one hinge in each flap includes the step of cutting slots through the flap to form at least one narrow portion of material between slots.

20. The method of claim 13 wherein the step of closing the central opening of the base with a plurality of flaps further includes the step of forming the plurality of flaps from a material having a tendency to return the flaps to a closed condition closing the central opening of the base so as to form a pressure relief valve that is independent of gravity.

21. The method of claim 13 wherein the step of closing the central opening of the base with a plurality of flaps further includes the steps of forming the plurality of flaps in a single sheet of flexible material, maintaining an outer periphery of the sheet of flexible material undivided so that the outer ends of the plurality of flaps are interconnected, and forming the inner ends of the plurality of flaps in a central portion of the sheet of flexible material.

22. The method of claim 21 further including the steps of providing first alignment members on the

peripheral portion of the base, and providing second alignment members, that are adapted to cooperate with the first alignment members for positioning the sheet of flexible material relative to the base, on the outer periphery of the sheet of flexible material.

23. The method of claim 13 further including the step of molding a rim onto the peripheral portion of the base for fixedly securing the outer end of each flap to the peripheral portion of the molded base.

24. The method of claim 23 wherein the step of molding a rim further includes the step of forming a locking portion on the rim that is adapted to secure the pressure relief valve to a panel of the vehicle and is further adapted to seal against the panel of the vehicle.